

THAT WHICH IS CLAIMED:

1. An apparatus for orienting a crystalline body during radiation diffractometry, the apparatus comprising:

a frame comprising:

5 a first member adapted to support said frame relative to a source of radiation; and

a second member movably connected to said first member; and

an engagement member carried by said second member for engaging a predetermined portion of the crystalline body to thereby define the angle at which incident radiation will impinge upon the crystalline body.

10

2. An apparatus according to Claim 1 wherein said frame further comprises a third member for locking said first and second members in position with respect to one another.

15

3. An apparatus according to Claim 1 wherein said first and second members of said frame are rotatably connected.

4. An apparatus according to Claim 1 wherein each of said first and second members comprises indicia to facilitate positioning of said first and second members relative to one another.

20

5. An apparatus according to Claim 1 wherein said second member defines an aperture for viewing the engagement of the predetermined portion of the crystalline body by said engagement member.

25

6. An apparatus according to Claim 1 wherein said second member comprises at least one support for engaging another portion of the crystalline body.

7. An apparatus according to Claim 1 wherein said first member comprises a base for supporting said frame relative to the source of the radiation.

30

8. An apparatus according to Claim 1 wherein said engagement member is threadably connected to said second member.

5 9. An apparatus for orienting a crystalline body during radiation diffractometry, the apparatus comprising:

a frame for supporting at least a portion of the crystalline body during radiation diffractometry, said frame comprising a base adapted to support said frame relative to a source of radiation; and

10 an engagement member carried by said frame for engaging a predetermined portion of the crystalline body, said engagement member extending at a non-orthogonal angle relative to said base.

10 10. An apparatus according to Claim 9 wherein said frame comprises a central portion and at least two arms extending outwardly said central portion, wherein one of said arms is connected to said base and another of said arms carries said engagement member.

20 11. An apparatus according to Claim 9 wherein said frame comprises a central portion and first, second and third arms extending outwardly from said central portion, wherein said first arm is connected to said base and said third arm carries said engagement member.

25 12. An apparatus according to Claim 11 wherein said third arm defines an axis extending through said central portion and bisecting an angle defined between said first and second arms.

30 13. An apparatus according to Claim 9 wherein said engagement member extends at an angle of 45° with respect to said base.

14. An apparatus according to Claim 9 wherein said frame comprises at least one support for engaging another portion of the crystalline body.

15. An apparatus according to Claim 9 wherein said engagement member
5 is threadably connected to said frame.

16. A method of verifying a location of an alignment feature of a crystalline body, the method comprising:
analyzing radiation returned from the crystalline body, wherein analyzing the
10 radiation comprises identifying a reference plane defined by the crystalline body based upon the returned radiation;
locating a target plane based upon the identification of the reference plane and a predefined angular offset between the reference plane and the target plane; and
determining a positional relationship between the target plane and the
15 alignment feature.

17. A method according to Claim 16 further comprising determining that the alignment feature is located properly by determining that any angular offset between the alignment feature and the target plane is less than a predetermined
20 threshold.

18. A method according to Claim 16 further comprising determining the predefined angular offset between the reference plane and the target plane prior to locating the target plane.
25

19. A method according to Claim 16 further comprising:
impinging radiation upon the crystalline body; and
detecting the radiation returning from the crystalline body prior to analyzing the returned radiation.
30

20. A method according to Claim 19 wherein impinging radiation upon the crystalline body comprises impinging radiation upon the crystalline body at a plurality of incidence angles, and wherein identifying the reference plane comprises identifying the incidence angle of the impinging radiation at which radiation having the greatest power is detected.

21. A method of analyzing a crystalline body to define an initial alignment feature, the method comprising:

analyzing radiation returned from the crystalline body, wherein analyzing the radiation comprises identifying a reference plane defined by the crystalline body based upon the returned radiation;

locating a target plane based upon the identification of the reference plane and a predefined angular offset between the reference plane and the target plane; and

forming the initial alignment feature upon the crystalline body to identify the target plane.

22. A method according to Claim 21 further comprising determining the predefined angular offset between the reference plane and the target plane prior to locating the target plane.

23. A method according to Claim 21 further comprising:
impinging radiation upon the crystalline body; and
detecting the radiation returning from the crystalline body prior to analyzing the returned radiation.

24. A method according to Claim 23 wherein impinging radiation upon the crystalline body comprises impinging radiation upon the crystalline body at a plurality of incidence angles, and wherein identifying the reference plane comprises identifying the incidence angle of the impinging radiation at which radiation having the greatest power is detected.

25. A method for orienting a crystalline body during radiation diffractometry, the method comprising:

providing a frame having first and second members movably connected to one another;

5 positioning the second member of the frame relative to the first member of the frame which is adapted to support said frame relative to a source of radiation; and

engaging a predetermined portion of the crystalline body with an engagement member carried by the second member of the frame to thereby define the angle at which the incident radiation will impinge upon the crystalline body.

10 26. A method according to Claim 25 wherein positioning the second member of the frame comprises positioning the second member of the frame relative to the first member of the frame based upon a predefined angular offset between reference and target planes defined by the crystalline body.

15 27. A method according to Claim 25 further comprising locking the first and second members once the second member is positioned relative to the first member.

20 28. A method according to Claim 25 further comprising supporting at least one end of the crystalline body with the frame while the predetermined portion of the crystalline body is engaged with the engagement member.

25 29. A method according to Claim 25 wherein engaging the predetermined portion of the crystalline body with the engagement member comprises threadably advancing the engagement member into engagement with the predetermined portion of the crystalline body.